

FORM PTO-1449
(Modified)

JUL 19 2004

U.S. Department of Commerce
Patent and Trademark Office

Attorney Docket No.: COOL-02100

Serial No.: 10/769,717

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Use Several Sheets If Necessary)

Applicants: Douglas Werner et al.

Filing Date: January 29, 2004

Group Art Unit: 3753

(37 CFR § 1.98(b))

FOREIGN PATENTS OR PUBLISHED FOREIGN PATENT APPLICATIONS

		Document Number	Publication Date	Country / Patent Office	Class	Subclass	Translation	
							Yes	No
TJW	AA	97212126.9	03/04/97	CN	BO1D	61/42		X
TJW	AB	2000-277540	10/06/00	JP	H01L	21/50		X

OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)

TJW	AC	Stephen C. Jacobson et al., "Fused Quartz Substrates for Microchip Electrophoresis", Analytical Chemistry, Vo. 67, No. 13, July 1, 1995, pages 2059-2063.						
TJW	AD	Kendra V. Sharp et al., "Liquid Flows in Microchannels", 2002, Vol. 6, pages 6-1 to 6-38.						
TJW	AE	Shuchi Shoji et al., "Microflow devices and systems", J. Microtech. Microeng. 4 (1994), pages 157-171, printed in the U.K.						
TJW	AF	Angela Rasmussen et al., "Fabrication Techniques to Realize CMOS-Compatible Microfluidic Microchannels", Journal of Microelectromechanical, Vol. 10, No. 2, June 2001, pages 286-297.						
TJW	AG	J. H. Wang et al., "Thermal-Hydraulic Characteristic of Micro Heat Exchangers", 1991, DSC-Vol. 32, Micromechanical Sensors, Actuators, and Systems, pages 331-339.						
TJW	AH	Gad Hetsroni et al., "Nonuniform Temperature Distribution in Electronic Devices Cooled by Flow in Parallel Microchannels", IEEE Transactions on Components and Packaging Technologies, March 2001, Vol. 24, No. 1, pages 16-23.						
TJW	AI	X. F. Peng et al., "Heat Transfer Characteristics of Water Flowing through Microchannels", Experimental Heat Transfer An International Journal, Vol. 7, No. 4, October-December 1994, pages 265-283.						
TJW	AJ	Linan Jiang et al., "Forced Convection Boiling in a Microchannel Heat Sink", Journal of Microelectromechanical Systems, Vol. 10, No. 1, March 2001, pages 80-87.						
TJW	AK	Muhammad M. Rahman et al., "Experimental Measurements of Fluid Flow and Heat Transfer in Microchannel Cooling Passages in a Chip Substrate", 1993, EEP-Vol. 4-2, Advances in Electronic Packages, pages 685-692.						
TJW	AL	X. F. Peng et al., "Forced convection and flow boiling heat transfer for liquid flowing through Microchannels", 1993, Int. J. Heat Mass Transfer, Vol. 36, NO. 14, pages 3421-3427.						
TJW	AM	Lung-Jieh Yang et al., "A Micro Fluidic System of Micro Channels with On-Site Sensors by Silicon Bulk Micromaching", September 1999, Microfluidic Devices and Systems II, Vol. 3877, pages 267-272.						
TJW	AN	G. Mohjuddin Mala et al., "Heat transfer and fluid flow in microchannels", 1997, Int. J. Mass transfer, Vol. 40, No. 13, pages 3079-3088, printed in Great Britain.						
TJW	AO	J. M. Cuta et al., "Fabrication and Testing of Micro-Channel Heat Exchangers", SPIE Microlithography and Metrology in Micromaching, Vol. 2640, 1995, pages 152-160.						
TJW	AP	Linan Jiang et al., "A Micro-Channel Heat Sink with Integrated Temperature Sensors for Phase Transition Study", 1999, 12 th IEEE International Conference on Micro Electro Mechanical Systems, pages 159-164.						
TJW	AQ	Linan Jiang et al., "Fabrication and characterization of a microsystem for a micro-scale heat transfer study", J. Micromech. Microeng. 9 (1999) pages 422-428, printed in the U.K.						
TJW	AR	M. B. Bowers et al., "High flux boiling in low flow rate, low pressure drop mini-channel and micro-channel heat sinks", 1994, Int. J. Heat Mass Transfer, Vol. 37, No. 2, pages 321-332.						
TJW	AS	Yongendra Joshi, "Heat out of small packages", December 2001, Mechanical Engineer, pages 56-58.						
TJW	AT	A. Rostami et al., "Liquid Flow and Heat Transfer in Microchannels: a Review", 2000, Heat and Technology, Vol. 18, No. 2, pages 59-68.						
TJW	AU	Lian Zhang et al., "Measurements and Modeling of Two-Phase Flow in Microchannels with Nearly Constant Heat Flux Boundary Conditions", Journal of Microelectromechanical Systems, Vol. 11, No. 1, February 2002, pages 12-19.						
TJW	AV	Muhammad Mustafizur Rahman, "Measurements of Heat Transfer in Microchannel Heat Sinks", Int. Comm. Heat Mass Transfer, Vol. 27, No. 4, May 2000, pages 495-506.						
TJW	AW	Issam Mudawar et al., "Enhancement of Critical Heat Flux from High Power Microelectronic Heat Sources in a Flow Channel", Journal of Electronic Packaging, September 1990, Vol. 112, pages 241-248.						
TJW	AX	Nelson Kuan, "Experimental Evaluation of Micro Heat Exchangers Fabricated in Silicon", 1996, HTD-Vol. 331, National Heat Transfer Conference, Vol. 9, pages 131-136.						
TJW	AY	E. W. Kreutz et al., "Simulation of micro-channel heat sinks for optoelectronic microsystems", Microelectronics Journal 31(2000) pages 787-790.						
TJW	AZ	J. C. Y. Koh et al., "Heat Transfer of Microstructure for Integrated Circuits", 1986, Int. Comm. Heat Mass Transfer, Vol. 13, pages 89-98.						
TJW	BA	Snezana Konecni et al., "Convection Cooling of Microelectronic Chips", 1992, InterSociety Conference on Thermal Phenomena, pages 138-144.						

Examiner:

J. M. Wallberg

Date Considered:

1/19/05

EXAMINER:

Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449
(Modified)U.S. Department of Commerce
Patent and Trademark Office

Attorney Docket No.: COOL-02100

Serial No.: 10/769,717

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Use Several Sheets if Necessary)

Applicants: Douglas Werner et al.

Filing Date: January 29, 2004

Group Art Unit: 3753

(37 CFR § 1.98(b))

OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)

TJW	BB	Michael B. Kleiner et al., "High Performance Forced Air Cooling Scheme Employing Microchannel Heat Exchangers", 1995, IEEE Transactions on Components, Packaging, and Manufacturing Technology-Part A, Vol. 18, No. 4, pages 795-804.
TJW	BC	Jerry K. Keska Ph. D. et al., "An Experimental Study on an Enhanced Microchannel Heat Sink for Microelectronics Applications", EEP-Vol. 26-2, Advances in Electronic Packaging, 1999, Vol. 2, pages 1235-1259.
TJW	BD	Shung-Wen Kang et al., "The Performance Test and Analysis of Silicon-Based Microchannel Heat Sink", July 1999, Terahertz and Gigahertz Photonics, Vol. 3795, pages 259-270.
TJW	BE	Joseph C. Tramontana, "Semiconductor Laser Body Heat Sink", Xerox Disclosure Journal, Vol. 10, No. 6, November/December 1985, pages 379-381.
TJW	BF	Sarah Arulanandam et al., "Liquid transport in rectangular microchannels by electroosmotic pumping", Colloid and Surfaces A: Physicochemical and Engineering Aspects 161 (2000), pages 89-102.
TJW	BG	Jeffery D. Barner et al., "Thermal Ink Jet Print Head Carriage with Integral Liquid Cooling Capabilities", Xerox Disclosure Journal-Vol. 21, No. 1, January/February 1996, pages 33-34.
TJW	BH	"Autonomous displacement of a solution in a microchannel by another solution", Research Disclosure, June 2001, pages 1046-1047.
TJW	BI	John M. Waldvogel, "Aluminum Silicon Carbide Phase Change Heat Spreader", Motorola, June 1999, Technical Developments, pages 226-230.
TJW	BJ	James P. Slupe et al., "An idea for maintaining a stable thermal environment for electronic devices", Research Disclosure, August 2001, page 1312.
TJW	BK	John M. Waldvogel, "A Heat Transfer Enhancement Method for Forced Convection Bonded-Fin Heatsinks", Motorola, December 1997, Technical Developments, pages 158-159.
TJW	BL	"Thin Heat Pipe for Cooling Components on Printed Circuit Boards", IBM Technical Disclosure Bulletin, Vol. 34, No. 7B, December 1991, pages 321-322.
TJW	BM	R. C. Chu et al., "Process for Nucleate Boiling Enhancement", IBM Technical Disclosure Bulletin, Vol. 18, No. 7, December 1975, page 2227.
TJW	BN	J. Riseman, "Structure for Cooling by Nucleate Boiling", IBM Technical Disclosure Bulletin, Vol. 18, No. 11, April 1976, page 3700.
TJW	BO	"Integrally Grooved Semiconductor Chip and Heat Sink", October 1971, IBM Technical Disclosure Bulletin, Vol. 14, No. 5, page 1425.
TJW	BP	"Enhanced Cooling of Thermal Conduction Module", IBM Technical Disclosure Bulletin, Vol. 30, No. 5, October 1987, page 426.
TJW	BQ	"Heat Exchanger Modules for Data Process with Valves Operated by Pressure form Cooling Water Pump", IBM Technical Disclosure Bulletin, Vol. 30, No. 5, October 1987, page 419.
TJW	BR	"Cold Plate for Thermal Conduction Module with Inlet for Cooling Water Near Highest Power Chips", IBM Technical Disclosure Bulletin, Vol. 30, No. 5, October 1987, page 413.
TJW	BS	"Circuit Module Cooling with Coaxial Bellow Providing Inlet, Outlet and Redundant Connections to Water-Cooled Element", IBM Technical Bulletin, Vol. 30, No. 5, October 1987, pages 345-347.
TJW	BT	"Piping System with Valves Controlled by Processor for Heating Circuit Modules in a Selected Temperature Profile for Sealing Integrity Test Under Temperature Stress", IBM Technical Disclosure Bulletin, Vol. 30, No. 5, October 1987, page 336.
TJW	BU	"Cooling System for Chip Carrier on Card", IBM Technical Disclosure Bulletin, Vol. 31, No. 4, September 1988, pages 39-40.
TJW	BV	"Chip Cooling Device", IBM Technical Disclosure Bulletin, Vol. 30, No. 9, February 1988, pages 435-436.
TJW	BW	W. E. Ahearn et al., "Silicon Heat Sink Method to Control Integrated Circuit Chip Operating Temperatures", IBM Technical Disclosure Bulletin, Vol. 21, No. 8, January 1979, pages 3378-3380.
TJW	BX	N. P. Bailey et al., "Cooling Device for Controlled Rectifier", IBM Technical Disclosure Bulletin, Vol. 21, No. 11, April 1979, pages 4609-4610.
TJW	BY	W. J. Kleinfelder et al., "Liquid-Filled Bellows Heat Sink", IBM Technical Disclosure Bulletin, Vol. 21, No. 10, March 1979, pages 4125-4126.
TJW	BZ	R. P. Chrisfield et al., "Distributed Power/Thermal Control", IBM Technical Disclosure Bulletin, Vol. 22, No. 3, August 1979, pages 1131-1132.
TJW	CA	A. J. Arnold et al., "Heat Sink Design for Cooling Modules in a Forced Air Environment", IBM Technical Disclosure Bulletin, Vol. 22, No. 6, November 1979, pages 2297-2298.
TJW	CB	A. J. Arnold, "Structure for the Removal of Heat from an Integrated Circuit Module", IBM Technical Disclosure Bulletin, Vol. 22, No. 6, November 1979, pages 2294-2296.
TJW	CC	U. P. Hwang et al., "Cold Plate for Thermal Conduction Module with Improved Flow Pattern and Flexible Base", IBM Technical Disclosure Bulletin, Vol. 25, No. 9, February 1983, page 4517.
TJW	CD	K. C. Gallagher et al., "Cooling System for Data Processor with Flow Restrictor in Secondary Loop to Limit Bypass-Cooling Water Flow", IBM Technical Disclosure Bulletin, Vol. 26, No. 5, October 1983, page 2658.

Examiner:

JW Alford

Date Considered:

1/19/05

EXAMINER:

Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 (Modified)		U.S. Department of Commerce Patent and Trademark Office		Attorney Docket No.: COOL-02100		Serial No.: 10/769,717	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use Several Sheets If Necessary)				Applicants: Douglas Werner et al.			
				Filing Date: January 29, 2004		Group Art Unit: 3753	
(37 CFR § 1.98(b))							
OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)							
TJW	CE	R. C. Chu et al., "Silicon Heat Sink for Semiconductor Chip", IBM Technical Disclosure Bulletin, Vol. 24, No. 11A, April 1982, page 5743.					
TJW	CF	J. M. Eldridge et al., "Heat-Pipe Vapor Cooling Etched Silicon Structure", IBM Technical Disclosure Bulletin, Vol. 25, No. 8, January 1983, pages 4118-4119.					
TJW	CG	J. R. Skobem, "Thermoelectrically Cooled Module", IBM Technical Disclosure Bulletin, Vol. 27, No. 1A, June 1984, page 30.					
TJW	CH	M. J. Brady et al., "Etched Silicon Integrated Circuit Heat Sink", IBM Technical Disclosure Bulletin, Vol. 27, No. 1B, June 1984, page 627.					
TJW	CI	H. D. Edmonds et al., "Heat Exchange Element for Semiconductor Device Cooling", IBM Technical Disclosure Bulletin, Vol. 23, No. 3, August 1980, page 1057.					
TJW	CJ	R. W. Noth, "Heat Transfer from Silicon Chips and Wafers", IBM Technical Disclosure Bulletin, Vol. 17, No. 12, May 1975, page 3544.					
TJW	CK	"Forced Boiling Cooling System with Jet Enhancement for Critical Heat Flux Extension", IBM Technical Disclosure Bulletin, Vol. 39, No. 10, October 1996, page 143.					
TJW	CL	"Miniature Heat Exchanger for Corrosive Media", IBM Technical Disclosure Bulletin, Vol. 38, No. 01, January 1995, pages 55-56.					
TJW	CM	"Self-Contained Active Heat Dissipation Device", IBM Technical Disclosure Bulletin Vol. 39, No. 04, April 1996, pages 115-116.					
TJW	CN	C. J. Keller et al., "Jet Cooling Cup for Cooling Semiconductor Devices", IBM Technical Disclosure Bulletin, Vol. 20, No. 9, February 1978, pages 3575-3576.					
TJW	CO	B. J. Ronkese, "Centerless Ceramic Package with Directly Connected Heat Sink", IBM Technical Disclosure Bulletin, Vol. 20, No. 9, February 1978, page 3577-3578.					
TJW	CP	K. S. Sachar, "Liquid Jet Cooling of Integrated Circuit Chips", Vol. 20, No. 9, February 1978, pages 3727-3728.					
TJW	CQ	A. H. Johnson, "Device Cooling", IBM Technical Disclosure Bulletin, Vol. 20, No. 10, March 1978, pages 3919-3920.					
TJW	CR	A. L. Pacuzzo et al., "Integrated Circuit Module Package Cooling Structure", IBM Technical Disclosure Bulletin, Vol. 20, No. 10, March 1978, pages 3898-3899.					
TJW	CS	R. D. Durand et al., "Flexible Thermal Conductor for Electronic Module", IBM Technical Disclosure Bulletin, Vol. 20, No. 11A, April 1978, page 4343.					
TJW	CT	D. Balderes et al., "Liquid Cooling of a Multichip Module Package", IBM Technical Disclosure Bulletin, Vol. 20, No. 11A, April 1978, pages 4336-4337.					
TJW	CU	J. A. Dorler et al., "Temperature Triggerable Fluid Coupling System for cooling Semiconductor Dies", IBM Technical Disclosure Bulletin, Vol. 20, No. 11A, April 1978, pages 4386-4388.					
TJW	CV	V. W. Antonetti et al., "Integrated Module Heat Exchanger", IBM Technical Disclosure Bulletin, Vol. 20, No. 11A, April 1978, page 4498.					
TJW	CW	P. Hwang et al., "Conduction Cooling Module", IBM Technical Disclosure Bulletin, Vol. 20, No. 11A, April 1978, pages 4334-4335.					
TJW	CX	A. J. Arnold, "Electronic Packaging Structure", IBM Technical Disclosure Bulletin, Vol. 20, No. 11B, April 1978, pages 4820-4822.					
TJW	CY	V. Y. Doo et al., "High Performance Package for Memory", IBM Technical Disclosure Bulletin, Vol. 21, No. 2, July 1978, pages 585-586.					
TJW	CZ	"Multi-Chip Package with Cooling by a Spreader Plate in Contact with a Chip having Cylindrical Holes Mating with an Inverse Frame Providing Water Flow Within its Pins", IBM Technical Disclosure Bulletin, Vol. 31, No. 5, October 1988, pages 141-142.					
TJW	DA	J. Landrock et al., "Cooling System for Semiconductor Chips", IBM Technical Disclosure Bulletin, Vol. 23, No. 4, September 1980, page 1483.					
TJW	DB	E. P. Damm, Jr., "Convection Cooling Apparatus", IBM Technical Disclosure Bulletin, Vol. 20, No. 7, December 1977, pages 2755-2756.					
TJW	DC	"Circuit Package with Circulating Boiling Liquid and Local Heat Exchanger to Limit Vapor in Coolant Outlet", IBM Technical Disclosure Bulletin, Vol. 31, No. 12 May 1989, page 34.					
TJW	DD	"Circuit Module Cooling with Multiple Pistons Contacting a Heat Spreader/Electrical Buffer Plate in Contact with Chip", IBM Technical Disclosure Bulletin, Vol. 31, No. 12, May 1989, page 5-7.					
TJW	DE	"TCM-LIKE Circuit Module with Local Heat Sink Resting on Chip and Chip Separated From Coolant by Bellows with Pins and Deflector Plate Attached to Local Heat Sink and Extending Above Bellows into Region of Coolant Flow", IBM Technical Disclosure Bulletin, Vol. 31, No. 11, pages 305-306.					
TJW	DF	"Water-Cooled Circuit Module with Grooves Forming Water Passages Near Heat-Producing Devices", IBM Technical Disclosure Bulletin, Vol. 31, No. 12, May 1989, pages 49-50.					
TJW	DG	"Cold Plate for Thermal conduction Module with Only Peripheral Mounting bolts, Large Surface Area Fin Inserts and Reduced Water Flow and Thermal Resistances", IBM Technical Disclosure Bulletin, Vol. 31, No. 12, May 1989, page 59.					
Examiner: <i>J. Wallberg</i>				Date Considered: <i>1/19/05</i>			
EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.							

FORM PTO-1449 (Modified)		U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No.: COOL-02100	Serial No.: 10/769,717
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use Several Sheets if Necessary)			Applicants: Douglas Werner et al.	
			Filing Date: January 29, 2004	Group Art Unit: 3753
(37 CFR § 1.98(b))				
OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)				
TW	DH	"Thermal Control Hardware for Accelerated Run-In Testing of Multi-Chip Modules", IBM Technical Disclosure Bulletin, Vol. 32, No. 5A, October 1989, page 129-130.		
TW	DI	"Means of Removing More Heat From a TCM (Or Other Liquid-Cooled Logic Package) By Reducing the Coolant Temperature", IBM Technical Disclosure Bulletin, Vol. 32 No. 5A, Oct 1989, pages 153-154.		
TW	DJ	E. G. Loeffel et al., "Liquid Cooled Module with Compliant Membrane", IBM Technical Disclosure Bulletin, Vol. 20, No. 2, July 1977, pages 673-674.		
TW	DK	V. Y. Doo et al., "Method of Effective Cooling of a High Power Silicon Chip", IBM Technical Disclosure Bulletin, Vol. 20, No. 4, September 1977, page 1436-1437.		
TW	DL	V. Y. Doo et al., "Semiconductor Chip Cooling Package, IBM Technical Disclosure Bulletin, Vol. 20, No. 4, September 1977, pages 1440-1441.		
TW	DM	"Heat Sink Fabrication Method", IBM Technical Disclosure Bulletin, Vol. 27, No. 10A, March 1985, page 5656-5657.		
TW	DN	"Thermal Conduction Module with Liquid Dielectric and Pistons with Surface Treatment for Enhanced Nucleate Boiling", IBM Technical Disclosure Bulletin, Vol. 27, No. 12, May 1985, page 6904.		
TW	DO	"Pin Fin Array Heat Pipe Apparatus", IBM Technical Disclosure Bulletin, Vol. 37, No. 09, September 1994, page 171.		
TW	DP	Youngcheol Joo et al., "Fabrication of Monolithic Microchannels for IC Chip Cooling", 1995, IEEE Micro Electro Mechanical Systems, pages 362-367.		
TW	DQ	Jaisree Moorthy et al., Active control of electroosmotic flow in microchannels using light, January 26, 2001, Sensors and Actuators B 75, pages 223-229.		
TW	DR	Andreas Manz et al., Electroosmotic pumping and electrophoretic separations for miniaturized chemical analysis systems, September 16, 1994, J. Micromech. Microeng. 4 (1994), pages 257-265, printed in the U.K.		
TW	DS	E. B. Cummings et al., Irrotationality of uniform electroosmosis, September 1999, Part of the SPIE Conference on Microfluidic Devices and Systems II, SPIE Vol. 3877, pages 180-189		
TW	DT	Stephen C. Jacobson et al., Fused Quartz Substrates for Microchip Electrophoresis, July 1, 1995, Analytical Chemistry, Vol. 67, No. 13, pages 2059-2063.		
TW	DU	Haim H. Bau, Optimization of conduits' shape in micro heat exchangers, December 10, 1997, International Journal of Heat and Mass Transfer 41 (1998), pages 2717-2723.		
TW	DV	V. K. Dwivedi et al., Fabrication of very smooth walls and bottoms of silicon microchannels for heat dissipation of semiconductor devices, January 25, 2000, Microelectronics Journal 31 (2000), pages 405-410.		
TW	DW	M. B. Bowers et al., Two-Phase Electronic Cooling Using Mini-Channel and Micro-Channel Heat Sinks: Part 2-Flow Rate and Pressure Drop Constraints, December 1994, Journal of Electronic Packaging 116, pages 298-305.		
TW	DX	Meint J. de Boer et al., Micromachining of Buried Micro Channels in Silicon, March 2000, Journal of Microelectromechanical systems, Vol. 9, No. 1, pages 94-103.		
TW	DY	S.B. Choi et al., FLUID FLOW AND HEAT TRANSFER IN MICROTUBES, 1991, DSC-vol. 32, Micromechanical sensors, Actuators, and Systems, ASME 1991, pages 123-134.		
TW	DZ	S. F. Choquette, M. Faghri et al., OPTIMUM DESIGN OF MICROCHANNEL HEAT SINKS, 1996, DSC-Vol. 59, Microelectromechanical Systems (MEMS), ASME 1996, pages 115-126.		
TW	EA	David Copeland et al., MANIFOLD MICROCHANNEL HEAT SINKS: THEORY AND EXPERIMENT, 1995, EEP-Vol. 10-2, Advances in Electronic Packaging ASME 1995, pages 829-835.		
TW	EB	J. M. Cuta et al., FORCED CONVECTION HEAT TRANSFER IN PARALLEL CHANNEL ARRAY MICROCHANNEL HEAT EXCHANGER, 1996, PID-Vol. 27/HTD-Vol. 338, Advances in Energy efficiency, Heat/Mass Transfer Enhancement, ASME 1996, pages 17-23		
TW	EC	K. Fushinobu et al., HEAT GENERATION AND TRANSPORT IN SUB-MICRON SEMICONDUCTOR DEVICES, 1993, HTD-Vol. 253, Heat Transfer on the Microscale, ASME 1993, pages 21-28.		
TW	ED	Charlotte Gillot et al., Integrated Micro Heat Sink for Power Multichip Module, September 3, 1999, IEEE Transactions on Industry Applications, Vol. 36, NO. 1, January/February 2000, pages 217-221		
TW	EE	John Gooding, Microchannel heat exchangers - a review, SPIE Vol. 1997 High Heat Flux Engineering II (1993), pages 66-82.		
TW	EF	Koichiro Kawano et al., Micro Channel Heat Exchanger for Cooling Electrical Equipment, HTD-Vol. 361-3/PID-Vol. 3, Proceeding of the ASME Heat Transfer Division - Volume 3, ASME 1998, pages 173-188.		
TW	EG	Chad Harris et al., Design and Fabrication of a Cross Flow Micro Heat Exchanger, December 2000, Journal of Microelectromechanical Systems, Vol. 9, No. 4, pages 502-508.		
Examiner:		Date Considered: 1/19/05		
EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.				

FORM PTO-1449 (Modified)		U.S. Department of Commerce Patent and Trademark Office		Attorney Docket No.: COOL-02100	Serial No.: 10769,717
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use Several Sheets If Necessary)				Applicants: Douglas Werner et al.	
				Filing Date: January 29, 2004	Group Art Unit: 3753
(37 CFR § 1.98(b))					
OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)					
TJW	EH	George M. Harpole et al., <u>MICRO-CHANNEL HEAT EXCHANGER OPTIMIZATION</u> , 1991, Seventh IEEE SEMI-THERM Symposium, pages 59-63.			
TJW	EI	Pei-Xue Jiang et al., <u>Thermal-hydraulic performance of small scale micro-channel and prous-media heat-exchangers</u> , 2001, International Journal of Heat and Mass Transfer 44 (2001), pages 1039-1051.			
TJW	EJ	X.N. Jiang et al., <u>Laminar Flow Through Microchannels Used for Microscale Cooling Systems</u> , 1997, IEEE/CPMT Electronic Packaging Technology Conference, pages 119-122, Singapore.			
TJW	EK	David Bazeley Tuckerman, <u>Heat-Transfer Microstructures for Integrated Circuits</u> , February 1984, pages ii-xix, pages 1-141.			
TJW	EL	M Esashi, <u>Silicon micromachining for integrated microsystems</u> , 1996, Vacuum/volume 47/numbers 6-8/pages 469-474.			
TJW	EM	T.S. Raviguruajan et al., <u>Effects of Heat Flux on Two-Phase Flow characteristics of Refrigerant Flows in a Micro-Channel Heat Exchanger</u> , HTD-Vol. 329, National Heat Transfer Conference, Volume 7, ASME 1996, pages 167-178.			
TJW	EN	T.S. Raviguruajan et al., <u>Single-Phase Flow Thermal Performance Characteristics of a Parallel Micro-Channel Heat Exchanger</u> , 1996, HTD-Vol. 329, National Heat Transfer Conference, Volume 7, ASME 1996, pages 157-166			
TJW	EO	T.S. Raviguruajan et al., <u>Liquid Flow Characteristics in a Diamond-Pattern Micro-Heat-Exchanger</u> , DSC-Vol. 59 Microelectromechanical Systems (MEMS), ASME 1996, pages 159-166			
TJW	EP	T.S. Raviguruajan, <u>Impact of Channel Geometry on Two-Phase Flow Heat Transfer Characteristics of Refrigerants in Microchannel Heat Exchangers</u> , May 1998, Journal of Heat Transfer, Vol. 120, pages 485-491			
TJW	EQ	J. Pfahler et al., <u>Liquid Transport in Micron and Submicron Channels</u> , March 1990, Sensors and Actuators, A21-A23 (1990), pages 431-434.			
TJW	ER	Kenneth Pettigrew et al., <u>Performance of a MEMS based Micro Capillary Pumped Loop for Chip-Level Temperature Control</u> , 2001, The 14 th IEEE International Conference on Micro Electro Mechanical Systems, pages 427-430.			
TJW	ES	C. Perret et al., <u>Microchannel integrated heat sinks in silicon technology</u> , October 12-15, 1998, The 1998 IEEE Industry Applications Conference, pages 1051-1055.			
TJW	ET	X.F. Peng et al., <u>Convective heat transfer and flow friction for water flow in microchannel structures</u> , 1996, Int. J. Heat Mass Transfer, Vol. 39, No. 12, pages 2599-2608, printed in Great Britain.			
TJW	EU	X.F. Peng et al., <u>Experimental investigation of heat transfer in flat plates with rectangular microchannels</u> , 1994, Int. J. Heat Mass Transfer, Vol. 38, No. 1, pages 127-137, printed in Great Britain.			
TJW	EV	X.F. Peng et al., <u>Cooling Characteristics with Microchanneled Structures</u> , 1994, Enhanced Heat Transfer, Vol. 1, No. 4, pages 315-326, printed in the United States of America.			
TJW	EW	Yoichi Murakami et al., <u>Parametric Optimization of Multichanneled Heat Sinks for VLSI Chip Cooling</u> , March 2002, IEEE Transaction on Components and Packaging Technologies, Vol. 24, No. 1, pages 2-9.			
TJW	EX	D. Munding et al., <u>High average power 2-D laser diode arrays or silicon microchannel coolers</u> , CLEO '89/Friday Morning/404.			
TJW	EY	L.J. Missaggia et al., <u>Microchannel Heat Sinks for Two-Dimensional High-Power-Density Diode Laser Arrays</u> , 1989, IEEE Journal of Quantum Electronics, Vol. 25, No. 9, September 1989, pages 1989-1992.			
TJW	EZ	M.J. Marongiu et al., <u>Enhancement of Multichip Modules (MCMs) Cooling by Incorporating MicroHeatPipes and Other High Thermal Conductivity Materials into Microchannel Heat Sinks</u> , 1998, Electronic Components and Technology Conference, pages 45-50			
TJW	FA	C.R. Friedrich et al., <u>Micro heat exchangers fabricated by diamond machining</u> , January 1994, Precision Engineering, Vol. 16, No. 1, pages 56-59			
TJW	FB	Mali Mahalingam, <u>Thermal Management in Semiconductor Device Packaging</u> , 1985, Proceedings of the IEEE, Vol. 73, No. 9, September 1985, pages 1396-1404.			
TJW	FC	T.M. Adams et al., <u>An experimental investigation of single-phase forced convection in microchannels</u> , 1997, Int. J. Heat Mass Transfer, Vol. 41, Nos. 6-7, pages 851-857, Printed in Great Britain.			
TJW	FD	T.M. Adams et al., <u>Applicability of traditional turbulent single-phase forced convection correlations to non-circular microchannels</u> , 1999, Int. J. Heat and Mass Transfer 42 (1999) pages 4411-4415.			
TJW	FE	Bassam Badran et al., <u>Experimental Results for Low-Temperature Silicon Micromachined Micro Heat Pipe Arrays Using Water and Methanol as Working Fluids</u> , May 31, 1997, Experimental Heat Transfer, 10: pages 253-272.			
TJW	FF	D. Jed Harrison et al., <u>Electroosmotic Pumping Within A Chemical Sensor System Integrated on Silicon</u> , Session C9 Chemical Sensors and Systems for Liquids, June 26, 1991, pages 792-795.			
TJW	FG	Kurt Seller et al., <u>Electroosmotic Pumping and Valveless Control of Fluid Flow within a Manifold of Capillaries on a Glass Chip</u> , 1994, Analytical Chemistry, Vol. 66, No. 20, October 15, 1994, pages 3485-3491.			
TJW	FH	Philip H. Paul et al., <u>Electrokinetic Generation of High Pressures Using Porous Microstructures</u> , 1998, Micro-Total Analysis Systems, pages 49-52.			
TJW	FI	Gh. Mohiuddin Mala et al., <u>Flow characteristics of water through a microchannel between two parallel plates with electrokinetic effects</u> , 1997, Int. J. Heat and Fluid Flow, Vol. 18, No. 5, pages 489-496			
Examiner: <i>J.M. Walther</i>		Date Considered: <i>1/19/05</i>			
EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.					

FORM PTO-1449
(Modified)U.S. Department of Commerce
Patent and Trademark Office

Attorney Docket No.: COOL-02100

Serial No.: 10/769,717

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Use Several Sheets If Necessary)

Applicants: Douglas Werner et al.

Filing Date: January 29, 2004

Group Art Unit: 3753

(37 CFR § 1.98(b))

OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)

TW	FJ	W. E. Morf et al., <u>Partial electroosmotic pumping in complex capillary systems Part 1: Principles and general theoretical approach</u> , October 16, 2000, <u>Sensors and Actuators B 72 (2001)</u> , pages 266-272.
TW	FK	M. Esashi, <u>Silicon micromachining and micromachines</u> , September 1, 1993, <u>Wear</u> , Vol. 168, No. 1-2, (1993), pages 181-187.
TW	FL	Stephanus Buttgenbach et al., <u>Microflow devices for miniaturized chemical analysis systems</u> , November 4-5, 1998, <u>SPIE-Chemical Microsensors and Applications</u> , Vol. 3539, pages 51-61.
TW	FM	Sarah Arunlanandam et al., <u>Liquid transport in rectangular microchannels by electroosmotic pumping</u> , 2000, <u>Colloids and Surfaces A: Physicochemical and Engineering Aspects</u> Vol. 161 (2000), pages 89-102.
TW	FN	Linan Jiang et al., <u>Closed-Loop Electroosmotic Microchannel Cooling System for VLSI Circuits</u> , <u>Mechanical Engineering Dept. Stanford University</u> , pages 1-27.
TW	FO	Susan L. R. Barker et al., <u>Fabrication, Derivatization and Applications of Plastic Microfluidic Devices</u> , <u>Proceedings of SPIE</u> , Vol. 4205, November 5-8, 2000, pages 112-118.
TW	FP	Timothy E. McKnight et al., <u>Electroosmotically Induced Hydraulic Pumping with Integrated Electrodes on Microfluidic Devices</u> , 2001, <u>Anal. Chem.</u> , Vol. 73, pages 4045-4049.
TW	FQ	Chris Bourne, <u>Cool Chips plc RECEIVES NANOTECH MANUFACTURING PATENT</u> , July 31, 2002, pages 1-2.
TW	FR	Frank Wagner et al., <u>Electroosmotic Flow Control in Micro Channels Produced by Scanning Excimer Laser Ablation</u> , 2000, <u>Proceedings of SPIE</u> Vol. 4088, June 14-16, 2000, pages 337-340.
TW	FS	H. A. Goodman, <u>Data Processor Cooling With Connection To Maintain Flow Through Standby Pump</u> , December 1983, <u>IBM Technical Disclosure Bulletin</u> , Vol. 26, No. 7A, page 3325.
TW	FT	<u>Electroerosion Micropump</u> , May 1990, <u>IBM Technical Disclosure Bulletin</u> , Vol. 32, No. 12, pages 342-343.
TW	FU	Shulin Zeng et al., <u>Fabrication and Characterization of Electrokinetic Micro Pumps</u> , 2000 <u>Inter Society Conference on Thermal Phenomena</u> , pages 31-35.
TW	FV	A. Manz et al., <u>Integrated Electroosmotic Pumps and Flow Manifolds for Total Chemical Analysis System</u> , 1991, <u>Inter. Conf. on Solid-State Sensors and Actuators</u> , pages 939-941.
TW	FW	O. T. Guenat et al., <u>Partial electroosmotic pumping in complex capillary systems Part: 2 Fabrication and application of a micro total analysis system suited for continuous volumetric nanotitrations</u> , October 16, 2000, <u>Sensors and Actuators B 72 (2001)</u> pages 273-282.
TW	FX	J. G. Sunderland, <u>Electrokinetic dewatering and thickening. I. Introduction and historical review of electrokinetic applications</u> , September 1987, <u>Journal of Applied Electrochemistry</u> Vol. 17, No. 5, pages 889-898.
TW	FY	J. C. Rife et al., <u>Acousto- and electroosmotic microfluidic controllers</u> , 1998, <u>Microfluidic Devices and Systems</u> , Vol. 3515, pages 125-135.
TW	FZ	Purnendu K Dasgupta et al., <u>Electroosmosis: A Reliable Fluid Propulsion System for Flow Injection Analysis</u> , 1994, <u>Anal. Chem.</u> , Vol. 66, No. 11, pages 1792-1798.
TW	GA	Ray Beach et al., <u>Modular Microchannel Cooled Heatsinks for High Average Power Laser Diode Arrays</u> , April 1992, <u>IEEE Journal of Quantum Electronics</u> , Vol. 28, No. 4, pages 966-976.
TW	GB	Roy W. Knight et al., <u>Optimal Thermal Design of Air cooled Forced Convection finned Heat Sinks - Experimental Verification</u> , October 1992, <u>IEEE Transactions on Components, Hybrids, and Manufacturing Technology</u> , Vol. 15, No. 5 pages 754-760.
TW	GC	Y. Zhuang et al., <u>Experimental study on local heat transfer with liquid impingement flow in two-dimensional micro-channels</u> , 1997, <u>Int. J. Heat Mass Transfer</u> , Vol. 40, No. 17, pages 4055-4059.
TW	GD	D. Yu et al., <u>An Experimental and Theoretical Investigation of Fluid Flow and Heat Transfer in Microtube</u> , 1995, <u>ASME / JSME Thermal Engineering Conference</u> , Vol. 1, pages 523-530.
TW	GE	Xiaoqing Yin et al., <u>Micro Heat Exchangers Consisting of Pin Arrays</u> , 1997, <u>Journal of Electronic Packaging</u> March 1997, Vol. 119, pages 51-57.
TW	GF	X. Yin et al., <u>Uniform Channel Micro Heat Exchangers</u> , 1997, <u>Journal of Electronic Packaging</u> June 1997, Vol. 119, No. 2, pages 89-94.
TW	GG	Chun Yang et al., <u>Modeling forced liquid convection in rectangular microchannels with electrokinetic effect</u> , 1998, <u>International Journal of Heat and Mass Transfer</u> 41 (1998), pages 4229-4249.
TW	GH	Arel Weisberg et al., <u>Analysis of microchannels for integrated cooling</u> , 1992, <u>Int. J. Heat Mass Transfer</u> , Vol. 35, No. 10, pages 2465-2473.
TW	GI	Roger S. Stanley et al., <u>Two-Phase Flow in Microchannels</u> , 1997, <u>DSE-Vol. 62/HTD-Vol. 354, MEMS</u> , pages 143-152.
TW	GJ	B. X. Wang et al., <u>Experimental investigation on liquid forced-convection heat transfer through microchannels</u> , 1994, <u>Int. J. Heat Mass Transfer</u> , Vol. 37 Suppl. 1, pages 73-82.
TW	GK	Kambiz Vafai et al., <u>Analysis of two-layered micro-channel heat sink concept in electronic cooling</u> , 1999, <u>Int. J. Heat Mass Transfer</u> , 42 (1999), pages 2287-2297.

Examiner:

D. W. Walther

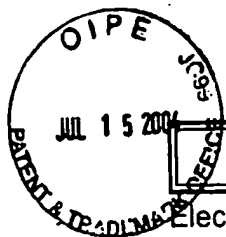
Date Considered:

1/19/05

EXAMINER:

Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 (Modified)		U.S. Department of Commerce Patent and Trademark Office		Attorney Docket No.: COOL-02100		Serial No.: 10/769,717	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use Several Sheets if Necessary)				Applicants: Douglas Werner et al.			
				Filing Date: January 29, 2004		Group Art Unit: 3753	
(37 CFR § 1.98(b))							
OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)							
TJW	GL	Gokturk Tune et al., <u>Heat transfer in rectangular microchannels</u> , 2002, Int. J. Heat Mass Transfer, 45 (2002), pages 765-773.					
TJW	GM	D. B. Tuckerman et al., <u>High-Performance Heat Sinking for VLSI</u> , 1981, IEEE Electron Device Letters, Vol. EDL-2, No. 5, pages 126-129.					
TJW	GN	Bengt Sunden et al., <u>An Overview of Fabrication Methods and Fluid Flow and Heat Transfer Characteristics of Micro Channels</u> , pages 3-23.					
TJW	GO	David S. Shen et al., <u>Micro Heat Spreader Enhance Heat Transfer in MCMs</u> , 1995, IEEE Multi-Chip Module Conference, pages 189-194.					
TJW	GP	S. Sasaki et al., <u>Optimal Structure for Microgrooved Cooling Fin for High-Power LSI Devices</u> , Electronic Letters, December 4, 1986, Vol 22, No. 25.					
TJW	GQ	Vijay K. Samalam, <u>Convective Heat Transfer in Microchannels</u> , September 1989, Journal of Electronic Materials, Vol. 18, No. 5, pages 611-617.					
TJW	GR	Sanjay K. Roy et al., <u>A Very High Heat Flux Microchannel Heat Exchanger for Cooling of Semiconductor Laser Diode Arrays</u> , 1996, IEEE Transactions on components, packaging, and manufacturing technology-part B, Vol. 19, No. 2, pages 444-451.					
TJW	GS	Charlotte Gillot et al., <u>Integrated Single and Two-Phase Micro Heat Sinks Under IGBT Chips</u> , IEEE Transactions on Components and Packaging Technology, Vol. 22 No. 3, September 1999, pages 384-389.					
TJW	GT	X.F. Peng et al., "Enhancing the Critical Heat Flux Using Microchanneled Surfaces", Enhanced Heat Transfer, 1998, Vol. 5 pp. 165-176.					
TJW	GU	H. Krumm "Chip Cooling", IBM Technical Disclosure Bulletin, Vol. 20, No. 7, December 1977, pg. 2728.					
TJW	GV	Jae-Mo Koo et al., "Modeling of Two-Phase Microchannel Heat Sinks for VLSI Chips", Mech. Eng. Depart. of Stanford University, pp. 422-426.					
	GW						
	GX						
	GY						
	GZ						
	HA						
	HB						
	HC						
	HD						
	HE						
	HF						
	HG						
	HH						
	HI						
	HJ						
	HK						
	HL						
	HM						
	HN						
	HO						
	HP						
	HQ						
	HR						
	HS						
	HT						
Examiner: <i>J. Walther</i>				Date Considered: <i>1/19/05</i>			
EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.							



ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18
Stylesheet Version v18.0

Title of
Invention

HERMETIC CLOSED LOOP FLUID SYSTEM

Application Number: 10/769717
Confirmation Number: 8804
First Named Applicant: Douglas Werner
Attorney Docket Number:



Search string: (5759014 or 5763951 or 5800690 or 5801442
or 5835345 or 5836750 or 5858188 or 5863708
or 5869004 or 5870823 or 5874795 or 5876655
or 5880017 or 5880524 or 5936192 or 5940270
or 5942093 or 5964092 or 5965001 or 5965813
or 5978220 or 5997713 or 5998240 or 6007309
or 6010316 or 6013164 or 6019882 or 6068752
or 6090251 or 6096656 or 6100541 or 6101715
or 6119729 or 6126723 or 6129145 or 6131650
or 6146103 or 6154363 or 6159353 or 6171067
or 6174675 or 6176962 or 6186660 or 6210986
or 6216343 or 6221226 or 6227809 or 6277257
or 6287440 or 6301109).pn.

US Patent Documents

Note: Applicant is not required to submit a paper copy of cited US Patent Documents

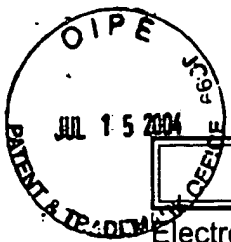
init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass
DW	1	5759014	1998-06-02	Van Lintel			
DW	2	5763951	1998-06-09	Hamilton et al.			
DW	3	5800690	1998-09-01	Chow et al.			
DW	4	5801442	1998-09-01	Hamilton et al.			
DW	5	5835345	1998-11-10	Staskus et al.			
DW	6	5836750	1998-11-17	Cabuz			
DW	7	5858188	1999-01-12	Soane et al.			
DW	8	5863708	1999-01-26	Zanzucchi et al.			
DW	9	5869004	1999-02-09	Parce et al.			
DW	10	5870823	1999-02-16	Bezama et al.			
DW	11	5874795	1999-02-23	Sakamoto			

DW	12	5876655	1999-03-02	Fisher	
DW	13	5880017	1999-03-09	Schwiebert et al.	
DW	14	5880524	1999-03-09	Xie	
DW	15	5936192	1999-08-10	Tauchi	
DW	16	5940270	1999-08-17	Puckett	
DW	17	5942093	1999-08-24	Rakestraw et al.	
DW	18	5964092	1999-10-12	Tozuka et al.	
DW	19	5965001	1999-10-12	Chow et al.	
DW	20	5965813	1999-10-12	Wan et al.	
DW	21	5978220	1999-11-02	Frey et al.	
DW	22	5997713	1999-12-07	Beetz, Jr. et al.	
DW	23	5998240	1999-12-07	Hamilton et al.	
DW	24	6007309	1999-12-28	Hartley	
DW	25	6010316	2000-01-04	Haller et al.	
DW	26	6013164	2000-01-11	Paul et al.	
DW	27	6019882	2000-02-01	Paul et al.	
DW	28	6068752	2000-05-30	Dubrow et al.	
DW	29	6090251	2000-07-18	Sundberg et al.	
DW	30	6096656	2000-08-01	Matzke et al.	
DW	31	6100541	2000-08-08	Nagle et al.	
DW	32	6101715	2000-08-15	Fuesser et al.	
DW	33	6119729	2000-09-19	Oberholzer et al.	
DW	34	6126723	2000-10-03	Drost	
DW	35	6129145	2000-10-10	Yamamoto et al.	
DW	36	6131650	2000-10-17	North et al.	
DW	37	6146103	2000-11-14	Lee et al.	
DW	38	6154363	2000-11-28	Chang	
DW	39	6159353	2000-12-12	West et al.	
DW	40	6171067	2001-01-09	Parce	B1
DW	41	6174675	2001-01-16	Chow et al.	B1
DW	42	6176962	2001-01-23	Soane et al.	B1
DW	43	6186660	2001-02-13	Kopf-Sill et al.	B1
DW	44	6210986	2001-04-03	Arnold et al.	B1
DW	45	6216343	2001-04-17	Leland et al.	B1
DW	46	6221226	2001-04-24	Kopf-Sill	B1
DW	47	6227809	2001-05-08	Forster et al.	B1

<i>DW</i>	48	6277257	2001-08-21	Paul et al.	B1
<i>DW</i>	49	6287440	2001-09-11	Arnold et al.	B1
<i>DW</i>	50	6301109	2001-10-09	Chu et al.	B1

Signature

Examiner Name	Date
<i>D. Walberg</i>	<i>1/19/05</i>



ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18

Stylesheet Version v18.0

Title of
Invention

HERMETIC CLOSED LOOP FLUID SYSTEM

Application Number: 10/769717



Confirmation Number: 8804

First Named Applicant: Douglas Werner

Attorney Docket Number:

Search string: (6313992 or 6317326 or 6321791 or 6322753
or 6324058 or 6351384 or 6337794 or 6388317
or 6400012 or 6406605 or 6415860 or 6416642
or 6417060 or 6424531 or 6443222 or 6444461
or 6457515 or 6495015 or 6537437 or 6543521
or 6553253 or 6572749 or 6588498 or 6591625
or 6632655 or 20010016985 or 20010024820 or
20010044155 or 20010045270 or 20010046703
or 20010055714 or 20020011330).pn.

US Patent Documents

Note: Applicant is not required to submit a paper copy of cited US Patent Documents

init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass
DW	1	6313992	2001-11-06	Hildebrandt	B1		
DW	2	6317326	2001-11-13	Vogel et al.	B1		
DW	3	6321791	2001-11-27	Chow	B1		
DW	4	6322753	2001-11-27	Lindberg et al.	B1		
DW	5	6324058	2001-11-27	Hsiao	B1		
DW	6	6351384	2002-02-26	Daikoku et al.	B1		
DW	7	6337794	2002-01-08	Agonafer et al.	B1		
DW	8	6388317	2002-05-14	Reese	B1		
DW	9	6400012	2002-06-04	Miller et al.	B1		
DW	10	6406605	2002-06-18	Moles	B1		
DW	11	6415860	2002-07-09	Kelly et al.	B1		
DW	12	6416642	2002-07-09	Alajoki et al.	B1		
DW	13	6417060	2002-07-09	Tavkhelidze et al.	B1		
DW	14	6424531	2002-07-23	Bhatti et al.	B1		

TW	15	6443222	2002-09-03	Yun et al.	B1
TW	16	6444461	2002-09-03	Knapp et al.	B1
TW	17	6457515	2002-10-01	Vafai et al.	B1
TW	18	6495015	2002-12-17	Schoeniger et al.	B1
TW	19	6537437	2003-03-25	Galambos et al.	B1
TW	20	6543521	2003-04-08	Sato et al.	B1
TW	21	6553253	2003-04-22	Chang	B1
TW	22	6572749	2003-06-03	Paul et al.	B1
TW	23	6588498	2003-07-08	Reysin et al.	B1
TW	24	6591625	2003-07-15	Simon	B1
TW	25	6632655	2003-10-14	Mehta et al.	B1

US Published Applications

Note: Applicant is not required to submit a paper copy of cited US Published Applications

init	Cite.No.	Pub. No.	Date	Applicant	Kind	Class	Subclass
TW	1	20010016985	2001-08-30	Insley et al.	A1		
TW	2	20010024820	2001-09-27	Mastromatteo et al.	A1		
TW	3	20010044155	2001-11-22	Paul et al.	A1		
TW	4	20010045270	2001-11-29	Bhatti et al.	A1		
TW	5	20010046703	2001-11-29	Burns et al.	A1		
TW	6	20010055714	2001-12-27	Cettour-Rose et al.	A1		
TW	7	20020011330	2002-01-31	Insley et al.	A1		

Signature

Examiner Name	Date
<i>DM Kollberg</i>	<i>1/19/05</i>